



**BARNSTABLE MUNICIPAL AIRPORT**  
**BOARDMAN-POLANDO FIELD**

480 BARNSTABLE ROAD, 2ND FLOOR

HYANNIS, MA 02601

[www.town.barnstable.ma.us](http://www.town.barnstable.ma.us)

Office: 508-775-2020  
Fax: 508-775-0453

Quincy "Doc" Mosby, Airport Manager  
Frank Sanchez, Asst. Airport Manager

Barnstable Municipal  
Airport Commission:

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Commissioner

July 26, 2006

Rodney Cluck, PhD  
Minerals Management Service  
381 Elden Street  
Mail Stop 4042  
Herndon, VA 20164

**RE: Comments on the Notice of Intent to Prepare an EIS on the Cape  
Wind  
Project**

Dear Dr. Cluck:

On May 30, 2006 the Minerals Management Service (MMS) published a request in the Federal Register for written scoping comments regarding the Draft Environmental Impact Statement (DEIS).<sup>1</sup> The Cape Wind project has significant implications for aviation safety both generally and specifically in regards to Nantucket Sound where some 400,000<sup>2</sup> flights take place every year. As such, on behalf of the Barnstable Municipal Airport we submit the following comments in response to MMS's request and out of sense of urgency that these issues be addressed.

First, we must emphasize our concern over the timing of this DEIS. As one of many offshore wind projects likely to be developed over time in the vicinity of coastal airports, the Cape Wind project should be postponed until the national regulations are in place to address cumulative impacts and aviation risks. Currently MMS is conducting a Programmatic Environmental Impact Statement and national regulations for offshore alternative energy development. The cumulative impacts of wind turbine development on air traffic safety is a significant issue which can only be properly mitigated by a strategic framework for the siting of every turbine

<sup>1</sup> 71 Fed. Reg. 30693- 30694 (May 30, 2006)

<sup>2</sup> Mike Suriano, National Air Traffic Controllers Association, letter to Cape TRACON, October, 2004.

development on a regional-basis and can only be addressed by national regulations. Airport and flight safety are therefore best addressed in the PEIS and individual project reviews should not move forward until national standards regarding the siting of wind development projects on a regional basis are developed and national regulations regarding the safe distance of turbine development from airport radar and flight paths are established. In addition to contributing to cumulative impacts of wind development, the Cape Wind project individually poses significant risks to aviation which need to be addressed.

Two particular concerns involve the risk of radar interference from the wind development the risk of interference with navigational aids.

Concerns regarding radar interference have been validated by studies from the UK government which, renowned for being a strong advocate of renewable energy, recently found that wind turbines do pose a threat to local aviation. In addition, Congress has recently taken action to ensure that the issue of radar interference is studied by the Department of Defense and the US Federal Aviation Administration has taken specific action in response to reports of interference to radar.

The Civil Aviation Authority (CAA) of the UK published its *Policy and Guidelines on Wind Turbines* report in June 2006. It represents the best available and most up to date information on the subject of the aviation impacts of wind turbines. As such, it should be the basis of any review of the impacts that the proposed project will have aviation in Nantucket Sound. It incorporated into these comments by reference.

According to the CAA findings, Radar interference from wind turbines can occur in a number of ways including all of the following<sup>3</sup>:

- Swamping the receivers: this refers to primary radar, and occurs when “the bulk of the wind turbine structure may reflect sufficient energy to swamp any reflected energy of aircraft in the same area”.
- Defeating moving target processing: “If the rotating wind turbine blades are within or close to the radar line of sight, then the Doppler shift in reflected energy from the blades may defeat any moving target processing and display the blades as targets or tracks that could be mistaken for aircraft.”
- Presenting an obstruction: “If the wind turbines are within radar line of sight and aircraft are required to be detected at longer range behind the

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<sup>3</sup> Summary of CAA findings found in Learmount, David; *UK highlights perils to air traffic surveillance of growing wind turbine 'farms'*; *Flight International*; July 7, 2006. last seen at <http://www.flightglobal.com/Articles/2006/07/11/207721/UK+highlights+perils+to+air+traffic+surveillance+of+growing+wind+turbine.html> on July 26, 2006

wind turbines then the following two effects may occur: obstruction – aircraft detection is lost in the shadow of the wind turbines; and diffraction – partial obscuring of the aircraft radar reflections by the wind turbines causes azimuth errors at the radar [so] the aircraft can be displayed in a skewed position, or appears to jitter in position as it passes behind multiple blades.”

- SSR reflections: “SSR energy may be reflected off the structures in both the uplink and downlink directions. This can result in aircraft, which are in a different direction to the way the radar is looking, replying through the reflector and tricking the radar into outputting a false target in the direction where the radar is pointing – in other words, at the obstruction.”
- Navigation aid signal effects: depending on the relative position of the wind farm, it “can affect the propagation of the radiated signal from instrument landing systems. As a result, the integrity and performance of these systems can be unacceptably degraded.

The DEIS will need to address each one of these types of interference in regards to local airport radar.

The need for the DEIS to address radar interference is essential because of the location of the proposed wind turbines in relation to local airports. The CAA report found that radar interference has been recorded from a single wind turbine located as much as 17 miles from the head of the radar.<sup>4</sup> This is significant in the context of Nantucket Sound because the 130 turbines proposed by the Cape Wind project would be less than 10 to 15 miles from the aviation radar systems of all three of the local airports. Barnstable Municipal, Martha’s Vineyard, and Nantucket Memorial general aviation airports and all flights departing from and arriving into anyone of these three airports would be impacted.

The CAA study suggests that there is also the potential for turbines to interfere with aeronautical navigation Aids.<sup>5</sup> The report specifically mentions interference to ILS (Instrument Landing System), VOR (VHF Omni Directional Range), DME (Distance Measuring Equipment), and NDB (Non Directional Beacon), which are aids relied on by the Barnstable Municipal Airport, the Martha’s Vineyard Airport, and the Nantucket Airport, and, to a lesser extent, Chatham Airport.

The CAA found that “As a result, the integrity and performance of these systems can be unacceptably degraded.”<sup>6</sup> Because of the tumultuous weather of the Nantucket Sound area, the integrity of navigation and communication aids are

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<sup>4</sup> Learmount, 2006, Chapter 2 Page 2

<sup>5</sup> Learmount, 2006, Chapter 2 page 2

<sup>6</sup> Learmount, 2006, Chapter 2 page 3

strictly maintained. To the extent wind turbines do impact navigational aids, the risk of planes colliding with the turbines, with other planes, or with the water of Nantucket Sound may be significantly increased. This too is an issue that must be addressed by the DEIS.

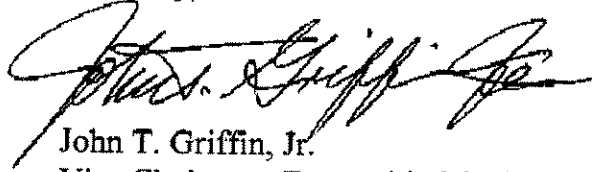
Finally, the issue of economic impact was addressed by the CAA study. The CAA found that:

"Even in circumstances where a proposed development may not affect a current activity, future expansion may be restricted were it to go ahead. This could eventually have an economic impact on the airport or activity and this aspect should be taken into consideration when assessing the impact of any proposed wind development."<sup>7</sup>

Existing studies suggest that the Cape Wind project could have a substantial impact on the safety of aviation in the entire Nantucket Sound area. As a matter of public safety, the DEIS must incorporate an assessment of the risks to aviation posed by the proposed Cape Wind Project. The DEIS should also consider the economic impacts that the proposed project will have on the growth of the local aviation industry as part of the project evaluation.

We appreciate the opportunity to comment on this important matter.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. Griffin, Jr.", written over a horizontal line.

John T. Griffin, Jr.

Vice Chairman, Barnstable Municipal Airport Commission

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<sup>7</sup> Learmount, 2006, Chapter 2 Page 5

BARNSTABLE MUNICIPAL AIRPORT

FACSIMILE TRANSMITTAL SHEET

TO: DR. RODNEY CLUCK FROM: Suzanne Kennedy  
Executive Asst. to the Airport Manager  
COMPANY: MINERALS MANAGEMENT SERVICE DATE: 7/27/06  
PHONE NUMBER: PHONE NUMBER 508-775-2020 X/101  
FAX NUMBER: 1-703-787-1053 FAX NUMBER 508-775-0453  
RE: MMS Letter - TOTAL NO. OF PAGES INCLUDING COVER (5)

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY

NOTES/COMMENTS

ATTACHED IS A COPY OF THE LETTER THAT  
WAS MAILED THIS MORNING -  
PLEASE RECORD AS BEING RECEIVED -

THANK YOU -

SUZANNE KENNEDY  
Suzanne Kennedy